

LOW-JITTER LOOP FILTER FOR A PHASE-LOCKED LOOP SYSTEM**ABSTRACT OF THE DISCLOSURE**

[0065] A loop filter device and method for implementing a loop filter for a phase locked loop ("PLL") circuit, which locks a frequency of a signal to a reference frequency, are disclosed. The loop filter includes a proportional path circuit and an integral path circuit. The proportional path circuit receives a charge pump output and determines and holds a charge to be directed to or taken from a PLL circuit throughout an update period based on a detected phase difference for the update period for locking a frequency of a signal for a PLL circuit to a reference frequency. The integral path circuit is coupled to the proportional path circuit, and the integral path circuit receives another charge pump output and tracks a total charge level for the PLL circuit based on phase differences for present and prior update periods.